

REMARKS:

This paper is herewith filed in response to the Examiner's final Office Action mailed on October 30, 2007 for the above-captioned U.S. Patent Application. This Office Action is a rejection of claims 1-45 of the application.

More specifically, the Examiner has rejected claims 1-22 under 35 USC 112, first paragraph, as failing to comply with the written description requirement; rejected claims 23-24, and 43 under 35 USC 102(b) as being anticipated by Thompson (US5,236,199); rejected claims 1-6, and 8-20 under 35 USC 103(a) as being unpatentable over Levy (US5,973,621) in view of Kling (US7,265,745); and rejected claims 7, 21-22, 25-42, and 44-45 under 35 USC 103(a) as being unpatentable over Levy and Kling in view of Thompson. The Applicant respectfully traverses the rejections.

Claims 1, 3, 5-7, 10, 20-22, and 44-45 have been amended for clarification. Support for the amendments claims may be found at least on page 4, line 4 to page 6, line 21. No new matter is added.

Regarding the rejection of claims 1-22 under 35 USC 112, first paragraph, the Applicant has amended independent claims 1 and 45 to remove "without simultaneous actuation of any of the other sensors." The rejection under 35 USC 112, first paragraph, is seen as overcome and the rejection should be removed.

Further, in regards to the rejection of claims 23-24, and 43 under 35 UCS 102(b) over Thompson the Applicant disagrees with the rejection.

The Applicant notes that Thompson relates to using a telephone keypad for directional control. Thompson discloses that a "standard telephone DTMF keypad signalling unit 101 is connected via a private or public telephone network 104 to a protocol conversion system or device 106" (col. 2, lines 61-64), and that "[t]he primary function of the protocol conversion system 106 is to

interpret the telephone keypad signalling and consolidate or concentrate the audience responses where appropriate,” (col. 3, lines 11-14).

Claim 23 recites:

A method of providing N-way directional control using more than $N/2$ but less than N sensors in an array to provide N different directional control signals, wherein each of the N different directional control signals is a member of either a first set of directional control signals or a second, different, set of directional control signals, the method comprising: associating each one of the sensors in the array with only one directional control signal from the first set of directional control signals; **associating each of the directional control signals of the second set with a pair of sensors in the array without associating each of the pairs of sensors in the array with a directional control signal of the second set**; detecting when a sensor or sensors of the array are actuated; and providing the directional control signal associated with the detected actuated sensor(s).

In the rejection of claim 23 the Examiner states:

“figure 1c discloses 6 keys with associated interpretation protocols for playing games, 1=up, 2=down, 4=7=left, and 5=8=right; figure 5d discloses simultaneous actuation of both 2 and 6; with the understanding of simultaneous key press and diagonal movements stated in claim 1 of Thompson, creates 8 way directional movement with only 6 sensors, which is greater than 4 and less than 8,” (emphasis added).

Firstly, the Applicant notes that the Examiner appears to equate an array as in claim 23 with the six keys as illustrated in Fig. 1C of Thompson. In regards to Fig. 1C, Thompson discloses:

“FIG. 1C shows an exemplary interpretation of telephone keypad signalling for presenting keyboard input to the program computer where the 1, 2, 4, 5, 7, and 8 signals are the directional elements; and the 3, 6, 9, *, 0, and # signals are the triggering elements,” (emphasis added), (co. 4, lines 48-52).

As Thompson discloses, Fig. 1C relates to telephone keypad signaling for presenting a keyboard input to the program computer. The Applicant notes that an operation of the Fig. 1C protocol is described by Thompson in the context of a user playing a “tank battle” game, (col. 7, line 43 to col. 8, line 34).

The Applicant contends that Fig. 1C in Thompson, as cited by the Examiner in the rejection of claim 23, at least does not disclose or suggest “associating each of the directional control signals of the second set with **a pair of sensors in the array**, without associating each of **the pairs of sensors in the array with a directional control signal of the second set**”, as recited in claim 23.

The Applicant notes that the Examiner appears to be indicating that Thompson discloses a pair of keys associated with a directional control signal, where the Examiner states:

“**figure 5d** discloses simultaneous actuation of both 2 and 6; with the understanding of simultaneous key press and diagonal movements stated in claim 1 of Thompson, creates 8 way directional movement with only 6 sensors, which is greater than 4 and less than 8,” (emphasis added).

In regards to Fig. 5 Thompson discloses:

“**FIGS. 5 A through F illustrate operation of the system to provide an audience with interactive control of a video camera associated with a televised broadcast.** The user would have selected the appropriate video channel 501 and established a telephone connection to the protocol conversion system in the normal fashion 502 as shown at FIG. 5A. **The user is informed of the appropriate telephone keypad signalling interpretation protocol 504 (FIG. 1D)** and the broadcaster has selected the audience controlled video camera 122 source signal 123 for network distribution 503 as seen at FIG. 5B,” (emphasis added), (col. 8, lines 35-45).

Firstly, the Applicant submits that, as indicated above, it can be seen that Figs. 5A to 5F in Thompson relate to the interactive control of a video camera. Further, Thompson appears to indicate that the operation as illustrated in Fig. 5D is related to the signaling interpretation protocol of Fig. 1D protocol, where Fig. 1D relates to signaling for robotic control applications, (col. 2, lines 44-46). The Applicant submits that the application of the Fig. 1C protocol with the video camera operation in Fig. 5D, as applied in the rejection, is apparently not supported by Thompson.

Further, in regards to Fig. 1D Thompson discloses:

“FIG. 1D shows an interpretation of the telephone keypad signalling for presenting robotic camera control input to the program computer where the 2, 4, 6, and 8 signals are the directional elements; and the 1, 3, *, and # signals are the triggering elements,” (col. 4, lines 63-67).

The Applicant contends that the operation of the keypad as illustrated Fig. 1D of Thompson is different from the operation of the keypad as illustrated in Fig. 1C. As an example, the Applicant notes that the telephone keypad as illustrated in Fig. 1D uses a specific number keys associated with different protocols for controlling the video camera as shown on Fig. 5D. The keys and their associated protocols are seen to be entirely different from the keys and associated protocols as illustrated in Fig. 1C of Thompson. Further, it is noted that the Examiner has specifically attributed the key types as illustrated in Fig. 1C of Thompson in order to support the rejection of claim 23. However, Thompson does not disclose or suggest combining the operations of the keys as illustrated in Fig. 1C with the operation of targeting the video camera as shown in Fig. 5D. For at least this reason the Applicant contends that the Examiner has improperly combined the operations as illustrated in Figures 1C and 5D of Thompson in the rejection of claim 23.

Furthermore, the Applicant contends that the Examiner is in error in **the rejection of claims 23, 24, and 43** at least where the Examiner states “**figure 5d discloses simultaneous actuation of both 2 and 6.**” The Applicant contends that Thompson clearly does not disclose a simultaneous actuation of the keys as stated by the Examiner.

Thompson actually discloses:

“As the user sends the "6" and "2" keypad signals 508, the protocol converter interprets these signals per the predetermined interpretation protocol as **"PAN Right" and PAN Up" data commands respectively**,” (emphasis added), (col. 8, lines 63-67).

The Applicant contends that Thompson can not be seen to disclose or suggest that the user sends a “simultaneous actuation” of “the "6" and "2" keypad signals 508.” The Applicant contends that

this interpretation by the Examiner in the rejections is clearly unsupported by Thompson. The Applicant submits that when the “6” and “2” keys are depressed, separate signals are seen to be provided to the protocol converter, which then interprets the signals of the keys 6 and 2 to indicate “PAN Right” and “PAN Up” **respectively**. The Applicant argues that for at least this reason the rejection of claim 23 is seen to be improper and the rejection of claim 23 should be removed.

The Applicant contends that for the reasons stated Thompson can not be seen to disclose or suggest at least where claim 23 recites in part “associating each one of the sensors in the array with only one directional control signal from the first set of directional control signals; associating each of the directional control signals of the second set with a pair of sensors in the array without associating each of the pairs of sensors in the array with a directional control signal of the second set.” Further, the Applicant contends that this is seen to be the case at least for the reason that Thompson is not seen to disclose or suggest a second set of directional control signals as in claim 23. For at least these reasons the rejection of claim 23 should be removed.

Further, for at least the reasons already stated above the Applicant contends that Thompson can not be seen to anticipate claims 24 and 43. Thus, the rejections of these claims under 35 USC 102(b) should be removed.

Regarding the rejection of claim 1 under 35 USC 103(a) as being unpatentable over Levy in view of Kling, the Applicant notes that claim 1 has been amended to recite in part “an array for providing N-way directional control”, and to refer to “directional control signals.”

Claim 1 as amended recites:

A device comprising: a user input device comprising a plurality of sensors in an array for providing N-way directional control, the array being for tactile actuation by a user a controller responsive to the actuation of a sensor by itself or the simultaneous actuation of a pair of adjacent sensors, the controller being configured to produce one of N different directional control signals upon

actuation of a sensor by itself, or upon simultaneous actuation of an adjacent pair of sensors; and wherein each of the N directional control signals belong to a first set of directional control signals or a second set of directional control signals, wherein each sensor in the array is associated with only one of the directional control signals of the first set and wherein each of the directional control signals of the second set is associated with an adjacent pair of sensors in the array, but not every one of the adjacent pairs of sensors is associated with a directional control signal of the second set.

The Applicant notes that Levy relates to a compact telephone keypad including a plurality of individual key caps 22. Further, Levy discloses a keypad with a pointing device 112 and the pointing device 112 in Levy “replace[s] one of the keys” (col. 11, lines 13-42).

The Applicant contends that Levy does not disclose or suggest “a plurality of sensors in an array for providing N-way directional control” as recited in amended claim 1. In addition, the Applicant notes that Levy at least does not disclose or suggest **“wherein each of the N directional control signals belong to a first set of directional control signals or a second set of directional control signals, wherein each sensor in the array is associated with only one of the directional control signals of the first set and wherein each of the directional control signals of the second set is associated with an adjacent pair of sensors in the array, but not every one of the adjacent pairs of sensors is associated with a directional control signal of the second set,”** as in claim 1.

In addition, Kling relates to a keypad in which letters may be input by pressing individual keys of the keypad or by pressing adjacent keys together. For example, in the context of Fig. 2, Kling discloses inputting the letter “A” by pressing the “1” key, inputting the letter “C” by pressing the “2” key, and inputting the letter “B” by simultaneously pressing the “1” and “2” keys. The Applicant submits that Kling fails to disclose or suggest using a keypad for directional control.

In view of the above, the Applicant contends that the references cited can not be seen to disclose or suggest claim 1. Thus, the rejection of claim 1 should be removed.

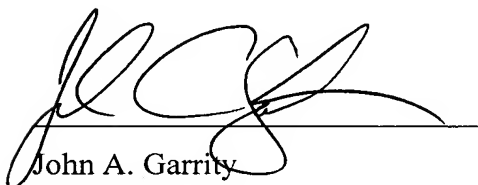
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In addition, regarding the rejection of claim 45 under 35 USC 103(a) the Applicant submits that for at least the reasons stated in regards to claim 1 above, the references cited can not be seen to disclose or suggest claim 45. Thus, the rejection of claim 45 should be removed.

Based on the above explanations and arguments, it is clear that the references cited cannot be seen to disclose or suggest claims 1-45. The Examiner is respectfully requested to reconsider and remove the rejections of claims 1-45 and to allow all of the pending claims 1-45 as now presented for examination.

For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of record. Should any unresolved issue remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

Respectfully submitted:



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S.N.: 10/512,132
Art Unit: 2629

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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. BOX 1450, Alexandria, VA 22313-1450.

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